

REVIEWS

INDICES TO THE MICROFICHE OF THE TYPES AND SPECIAL COLLECTIONS (FLOWERING PLANTS AND FERNS) OF THE HERBARIUM OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. James A. Mears. 274 pp. 1984. Meckler Publishing, 11 Ferry Lane West, Westport, Connecticut 06880. \$350.00

The thorough title tells it all. Two copies of this clothbound set of indices are included in the \$3700 purchase price for the complete microfiche collection. The volume is available separately, however, for anyone (or, more likely, any institution) desiring it. This work alone will give some clue as to whether a type may be in the Philadelphia Academy, and thus can be useful even without the microfiche (or herbarium itself)—and it contains some useful historical information besides. But the phrase "special collections" is an important part of the title.

This is not an index to verified types. Many of the PH collections date from before the type method. The major portion of this volume (185 pp.) covers the "Collection of Types and Early Authenticating Specimens," and the latter phrase includes a multitude of specimens possessed or annotated by authors of species names or simply by important early botanists. Even the verified types are not designated as such in this index. Collectors' names but, strangely, not their numbers are given and so are geographic sources, presumably whenever known (which is sometimes not often); but the index does not reveal, and makes it difficult to determine without examination of the specimen or photograph, whether any specimen is in fact a type. Perhaps this is good—it encourages checking the original data—but it does reduce the usefulness of the index.

Shorter indices cover the G. H. E. Muhlenberg Herbarium, the B. S. Barton Herbarium Fragment, the A. B. Lambert Herbarium Fragment, the Lewis & Clark Collection, and specimens of various other notables. The verified types from some of these, however, are listed in the initial index to types and early authenticating specimens and *not* with the collection in which they are in fact filed (e.g., Barton, Muhlenberg). Some specimens which borrowers did not return for this project did not get photographed at all (but may be indexed), and "many type specimens (particularly unlabeled isotypes)" are "still in the general and local herbaria of the Academy." An introduction to each of the indices explains the origin of the particular collection and the sequence of names (Muhlenberg following his Catalogue, Barton with families after the Bessey system, Lambert alphabetical by species as named in Pursh, the initial index after Dalla Torre & Harms, etc.). All this apparent chaos is partly alleviated by a concluding index to all pages on which specimens of each family are listed.

The broad scope of this work greatly enhances its usefulness—not alone the generous definition of "special collections" besides types, but also the inclusion of specimens from collections on indefinite loan to the Academy, such as those of the

American Philosophical Society and the University of Pennsylvania. Many botanists may be pleasantly surprised to learn that the PH collections—well known as an extraordinarily rich source of early North American specimens—include so much Old World material (with some even from Linnaeus himself).

I am unable to say how many specimens are indexed. An advertisement states that there are 454 microfiche each with a maximum of 60 plants. Slightly less than 300 of the fiche cover the herbarium of "types and early authenticating specimens"—which are said to number about 40,000 vascular plants. Perhaps less than half of these *are* photographed—or does the apparent contradiction in numbers merely mean there is an average of two collections per photo?—*Edward G. Voss, Herbarium, University of Michigan, Ann Arbor, MI, 48109, U.S.A.*

METHODS IN PLANT VIROLOGY. 1984. Hill, Stephen A. *Methods in Plant Pathology* Vol. 1. Blackwell Scientific Publications, Ltd., Oxford, London, Edinburgh, Boston, Palo Alto, Melbourne. 167 pp. + viii. Paper, \$24.00.

The volume concentrates on the methods for virus diagnosis. The beginning student of plant virology should learn the basic techniques and gradually evolve into the more sophisticated techniques. The techniques are sequential and may provide a route to virus characterization. The Chapters are 1) Introduction, 2) Histological and other Basic Methods, 3) Basic Virus Characterization and Storage, 4) Transmission Tests (Sap, graft, and vector transmission), 5) Serological Techniques (Precipitation and agglutination tests, labelled antibody techniques), 6) Electron Microscopy (Quick methods for sample preparation and immuno electron microscopy).

By grouping the basic methods of characterization into one volume, the author has produced a valuable handbook that not only describes the concept of each method but also lists the materials required and proceeds in a step by step cookbook fashion. The text was written for senior undergraduates and researchers in plant pathology and plant virology and is recommended not only for its total contents but for the brief, concise individual nature of each recipe.—*Wm. F. Mabler, Southern Methodist University Herbarium, Dallas, TX 75275, U.S.A.*

INTRODUCTION TO MODERN MYCOLOGY. 1984. Deacon, J. W. *Basic Microbiology Series* Vol. 7. Blackwell Scientific Publications, Ltd., Oxford, London, Edinburgh, Boston, Palo Alto, Melbourne. 167 pp. + viii. Paper, \$24.00.

The text is an introduction to the biology of the fungi and deals with their structure, function, and some aspects of their life history. The Chapters include topics on structure and fine structure, growth, differentiation, nutrition, metabolism, environmental conditions for growth, genetic systems, spore dispersal, the role of fungi as saprophytes and parasites (plant and animal), and on prevention and control of fungal growth.